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A YEAR WITH THE

Great Salt Lake



Locomotive Springs:
Built by the Civilian Conservation Corps in 1931, some of the original wooden dikes still remain in this waterfowl refuge.

Locomotive Springs Waterfowl Management Area

Gunnison Island:
From 3,000 to 18,000 adult white pelicans nest here each spring, making it one of the most important U.S. nesting areas. Some 12,000 to 19,000 California gulls also nest on the island.

Pumping Station

Hill Air Force Training Range

Minerals Production: Six companies - which pay royalties to the state - remove about 1.6 million tons of salt annually by pumping water from the lake into evaporation ponds, then scooping up the mineral. Potash and magnesium also are extracted from the ponds.

Bonneville Speedway

AMAX Magnesium

Salt Flats: Sir Malcolm Campbell of Great Britain put the Salt Flats on the map in 1935 when he set a world land speed record of 301.13 miles per hour in a Napier-Campbell Special. Void of plant life, the foot-deep salt flats cover close to 40 square miles on the lake's west side.

Lake Profile: When it reached a record level in 1987, the Great Salt Lake covered approximately 2,300 square miles and contained 30-million acre feet of water. Today it is approximately 70 miles long, 30 miles wide and 4,200 feet above sea level. Because there's no outlet to the sea, salt and minerals from its major tributaries - the Bear, Weber and Jordan Rivers - accumulate in its waters. The average salt content is 20 percent on the north arm and 10 percent on the south arm. But concentrations have ranged from as high as 27 percent - when salt crystallizes - to as low as five percent.

Antelope Island: It's the largest of the lake's eight islands at 23,175 acres. Kit Carson and John C. Fremont - who surveyed the lake in 1844 - named the island for its impressive antelope herd. The last antelope was seen on the island in 1932, but the state plans to reintroduce the animals. Entrepreneurs introduced buffalo to the island in 1893, and the herd still thrives today. Before Antelope Island State Park closed in 1983 when floodwaters inundated the causeway, it hosted an average of 427,000 visitors a year. The park may open this fall.

Golden Spike Historical Site: The joining of railroad tracks here on May 10, 1869, effectively linked the East and West coasts of the United States. The event ranks among the most important in U.S. history.

Golden Spike National Historical Site

Indian Cave

Bear River Migratory Bird Refuge

Freshwater

Willard Bay State Park

Harold S. Crane Waterfowl Management Area

Ogden Bay Refuge

Ogden Bay

Excise taxes and duck stamp purchases paid by hunters helped build this 20,000-acre refuge, owned by the state.

Carrington Island

Great Salt Lake State Park

Antelope Island

Salt Lake City International Airport

Morton Salt

South Shore State Park

Saltair Marina

American Salt

Sol-Air Salt

Mark Knudsen / The Salt Lake Tribune

Wetlands: Great Salt Lake wetlands provide critical habitat for migrating and nesting waterfowl and help local governments solve flood control problems. Treated sewage and industrial byproducts are discharged into the marshes, which naturally remove organic matter and toxic pollutants.

Wildlife: An estimated 250 species of birds - including bald eagles, great blue herons, white-faced ibis and phalaropes - find food and shelter on the lake's wildlife reserves. Fox, muskrats, weasels and ring-tailed cats are among the 64 mammals that make the lake home. Eight different snakes, 8 amphibians and 9 lizards also live there. Brine shrimp are the only creatures which actually survive in the lake's salty waters.

Weather: The Great Salt Lake can produce the so-called "lake effect," which enhances the amount of snow and rain that falls along the Wasatch Front. It also produces a 10 to 15 mph breeze on spring, summer and fall afternoons, and increases the amount of winter fog in surrounding valleys.

Recreation: Tourists from around the world flock to the beaches of the Great Salt Lake, whose briny waters help bathers float. The lake also draws sailboats and an occasional power boater, and its marshes and wildlife management areas host hunters, school groups and naturalists.

Geology: The Great Salt Lake

can be traced back to ancient Lake

Bonneville, which covered much of western Utah and small parts of Idaho and Nevada during the Great Ice Age some 20,000 years ago. A natural earth dam in Cache Valley gave way about 14,500 years ago. Thirty-five million cubic feet of water per second gushed out of the opening, lowering the level of Lake Bonneville 300 feet. In the warmer and drier period which followed, Lake Bonneville receded and the Great Salt Lake was formed.

Archaeology: The first record of man - dating 12,000 years ago - was discovered in Danger Cave near Wendover. Other evidence of early man, including fine rock writing, can be found on Stansbury Island.

Story, Illustration on A-13

Yearlong Series to Raise Level of Lake Awareness

The Great Salt Lake is more than just a dead sea. It is a unique resource with a colorful human and natural history, as well as an untapped potential for recreation. Though it affects their weather, economy and lifestyle, few Utahns know much about their lake.

Veteran *Salt Lake Tribune* recreation writer Tom Wharton, in spending a year with the Great Salt Lake, will reveal in a 12-part series during 1992 the amazing facets, many not generally known, of this unusual and misunderstood natural wonder. The series will be published on the last Monday of each month in *The Tribune's* recreation section. It will conclude with an original essay on The Great Salt

Lake by noted Utah author Terry Tempest Williams.

Here is the series' publication schedule by date and planned topics:

- Jan. 27: Bald eagles on the lake
- Feb. 24: The lake's tributaries
- March 30: Fascinating geology
- April 27: Rebirth of a marsh
- May 25: Nesting island birds
- June 29: Recreation: past and future
- July 27: Shorebirds: unknown stories
- Aug. 31: Fish, shrimp and mammals
- Sept. 28: The unexplored shores
- Oct. 26: Hunting: its key role
- Nov. 30: Industries' roles
- Dec. 27: An essay

can launch boats and walk along dikes at Willard Bay and the lake's eight wildlife refuges.

At Ogden Bay, for example, you can see bald eagles in a parking lot. "About 100 to 150 eagles winter in and around the Great Salt Lake," says Bob Walters of the Division of Wildlife Resources. "For a bird as wild and independent as we know the bald to be, you can get incredibly close to them as they are perched in trees."

In late fall, billions of blood-red brine shrimp eggs float on the cobalt blue water, creating brilliant streaks of color a quarter-mile wide and 2 to 3 miles long. The north arm of the lake also turns a greenish-red in the late summer when bil-

lions of bacteria color the water.

Here's a real surprise: there's no stench on the open waters. "That smell is not the lake, it's the shore," says John Rowland, a Salt Lake City resident who sails a catamaran. "It's a lot like being on the ocean. You can't see the bottom. Land is quite a ways away. It's peaceful, quiet and serene."

Those searching for the bizarre can find it in plant life along the lake's salt marshes. There are bushes with microscopic salt glands that burst like balloons, and grasses that secrete salt crystals on their leaves.

"These marshes are like wilderness,"

Sce A-4, Column 1

Access is difficult. Most visitors - about 325,000 annually - see only the south shore adjacent to the waterlogged Saltair resort, where the lake's foul breath can be overwhelming. But Antelope Island State Park, closed since 1983 when flooding wiped out the causeway, is scheduled to open this fall. And visitors

Saudis Urge U.S. To Topple Saddam

THE NEW YORK TIMES

WASHINGTON — Saudi Arabia is pressing the Bush administration to organize a large covert action campaign in Iraq aimed at dividing Iraq's army and toppling Saddam Hussein, United States and allied officials say.

The Saudi initiative seeks an allied effort to supply arms and intelligence to Kurdish rebels in northern Iraq, Shiite Moslem fighters in the south, and Sunni Moslem opposition forces in central Iraq. The aim is to draw out and divide Saddam's last Republican Guard divisions protecting his strongholds around Baghdad and subject them to allied air assaults.

Saudi advocacy for a new and more aggressive campaign comes as the Bush administration is considering new steps to support Iraqi resistance forces with allied military power and to exploit growing

tensions in the Iraqi leadership in a manner that would hasten Saddam's downfall while leaving the formation of a successor government clearly in Iraqi hands.

The White House remains deeply concerned that the Iraqi leader is still in power at the outset of a presidential election year in which his survival has become a political issue. The ouster of Saddam before November's election would remove the shadow that the Iraqi leader casts over Bush's campaign and eliminate the possibility that Saddam could do harm to Bush's re-election effort through provocative statements emanating from Baghdad.

American and allied officials discussed those plans with a reporter because some believe that the disclosure will by itself instill confidence in Iraqi opposition forces, while others, who oppose some of

See A-2, Column 1

Go West — If You Can Find Room

By David Foster
THE ASSOCIATED PRESS

It didn't take a lot of charts and figures to convince Butch Barker that the wide-open West is filling up.

He saw the light — literally — two years ago, when the little northern California town of Burney got its first traffic signal.

When Barker moved to Burney in 1981 for its clean air and country living, driving through town was clear sailing, as free as the mountains all around. Now it's stop, go, stop, go — and life isn't quite the same.

"It's a symbolic thing," Barker said. "Especially at first, you'd stop and immediately think of why the light was there and how it came to be."

How it came to be, for Burney and a thousand other towns in the American

GROWING

1st of six articles about the American West

West, can be answered with one simple statistic: The West is by far the nation's fastest-growing region, with a 22 percent population jump in the 1980s, more than twice the national rate.

Newcomers are lured by the same qualities that beckoned early pioneers — open space, economic opportunity,

a chance to start anew. But as more

See A-3, Column 1

EL NIÑO AND UTAH

A new term permeates weather talk these days. El Niño. Be it wet or dry, if it is extreme, El Niño (neen-yo) must be involved. But what does it mean?

A strong El Niño developed in 1982-83. The next couple of years, the weather around the world was out of whack. Remember those years in Utah? The State Street river? Sandbag brigades? The Thistle slide? A weaker El Niño surfaced in 1986-87, coinciding with a drought in the West.

Inside today, *Salt Lake Tribune* veteran weather reporter Mike Gorrell explores what one scientist called the "largest short-term climate fluctuation on the planet."

Story, Illustration on A-13

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WEATHER

Areas of low clouds and fog can be expected throughout the state today.

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SPORTS

Karl Malone delivered and stamped his place in Jazz history Saturday night when he passed Adrian Dantley as the team's all-time leading scorer.

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THE ARTS

Utah playwright Aden Ross' "K-Mille," inspired by French sculptor Camille Claudel's life, premieres at the Salt Lake Acting Company this week.

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COMMENTARY

If the Legislature is serious about the state's plan for education, it will back the plan's words with cold, hard cash.

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BUSINESS

It's taken a few years, but Utah shoppers finally have access to a burgeoning number of fine factory outlets.

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TRAVEL

If you think you've seen a big party, think again. The unabashed bash they throw in Recife, Brazil, during Carnaval is, well, of Amazonian proportions.

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LIFESTYLES

Fang Chaohua came to Salt Lake City from Shanghai, China, and is practicing her art as an herbalist. Chinese medicine is based on yin and yang.

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PARADE

As childless women watch the biological clock tick away, desperation often outweighs all else in the passion to be a mother. Ignoring risks, many women still try. Now, thanks to new fertility techniques, women are making it happen more — and at age 40 and older.

Magazine Insert